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the **Quarterdeck**

*a weekly publication serving
the Naval Postgraduate School*

**See
special
insert**

Volume 2 Issue 42

October 25, 1985

NPS conducts research on experimental wave engine

A program is underway at the NPS turbopropulsion laboratory (TPL) aimed at improving Navy and commercial aircraft engines by the introduction of a small component called a wave rotor.

If the effort is successful, the gas turbine engine would be able to operate at increased temperatures and deliver more thrust from a lighter engine—a development which would improve performance and efficiency.

Though the concept has been around since the 1940's, introduction of the wave rotor has been hampered in the past, partially because computers capable of calculating unsteady internal flow aerodynamics were not available. This obstacle no longer exists, and one-dimensional computer codes for design and analysis are now in use at NPS, according to TPL research scientist Dr. Atul Mathur.

Improvements to standard gas turbine engines have been limited by the temperatures the turbine components can withstand—around 2500 degrees Fahrenheit. Attempts have been made to develop new materials that would enable rotating components for gas turbine engines to withstand the higher temperatures required for increased performance, but they have so far been unsuccessful. The wave rotor circumvents this problem by a gas-to-gas exchange that alternates heating and cooling, much like the alternate heating and cooling within the cylinders of an internal combustion engine.

A peak cycle temperature of about 3500 degrees Fahrenheit is allowed by the wave rotor, so more work is derived from the system while gas temperatures through turbine components are maintained at or below the acceptable 2500 degrees level.

This is accomplished by introducing relatively cool air from the compressor into the wave rotor, cooling its chambers. The cool gas is further compressed by an unsteady wave pattern that has been generated by selected entry and exit of high temperature combustion products. The compressed air is then routed to the combustion chamber, burned and rerouted to the wave rotor to create the wave pattern

(continued page six)

CFC at mid-point

As the 1985 Combined Federal Campaign ended its third week contributions slowed down, said campaign coordinator LCDR John Grassi.

"The average contributions are high, but so far there are fewer contributors than we expected," he said. In several areas, only 10 to 15 percent of the NPS population have donated to CFC charities, even though the campaign is now at the mid-point, LCDR Grassi said.

News briefs

An NPS research project, involving development of a solid state digital recorder to measure the space shuttle Discovery's noise levels during launches, is featured in the current (August 1985) edition of "All Hands" magazine.

Influenza inoculations will be administered to all Navy and Marine Corps members Oct. 30-31, 0830-1430, in the Barbara McNitt Ballroom.

These inoculations are mandatory for all active duty military personnel.

With the season changing and the mornings becoming a bit cooler, it's time for NPS military personnel to bring out their winter uniforms. Effective Oct. 28, the winter uniform will be required.

Louise Diver, field representative from the Navy Relief Society (NRS) headquarters, will visit NPS Nov. 4-8 to conduct a course designed to inform the military community about the numerous programs offered by the local NRS branch.

The course will be held Nov. 4-8, 0900-1200, in the NPS Catholic Fellowship Hall. Navy Relief policy, volunteerism, budgeting, pay and allowances, and some dependent benefits will be discussed.

For more information about the course schedule and free nursery care for preschoolers, call Pril Buege at 372-2793 or the NRS office at 373-7665.

from the Chaplain

by CDR (Fr.) M. J. Hary, CHC, USNR

We had just returned for a WestPac tour. We, the USS Coral Sea's two chaplains, found ourselves sitting before a camera in a TV station in San Francisco, anxious and slightly uncomfortable from the heat and glare of the lights. The moderator, a seminary friend of mine, was reassuring. "Nothing to it," he said. The countdown was completed and we were on.

"Good evening," he began. "As we approach Christmas and its message of peace, we have for our panel two Navy chaplains..." and so on.

"Gentlemen, my first question is, how can you, as representatives of the Prince of Peace, in conscience, have anything to do with an aircraft carrier, especially one carrying nuclear weapons?"

"Some friend," I thought and tried to react calmly. We replied by citing the 211 year old mandate that authorizes Navy chaplains to provide for the free exercise of religion for sailors at sea, separated from their homes and families. In other words, we were there primarily to minister to the crew.

Then we spent some time on the right of self-defense. The U.S. has a right to protect its legitimate interests and assure open sea lanes.

We discussed also the deterrent effect of a carrier's presence. Just by cruising around, all sorts of local flare-ups remain just that. Brush fires don't become major problems when that great ship is known to be in the area. Our 5,000 shipmates were one in the conviction that their hard work and hardships were worth it. They were contributing to world peace, not just talking about it.

But as the proverb has it, "One picture is worth a thousand words." I would have given anything to have been able to point to that event of a few weeks ago when four F-14s from the USS Saratoga escorted an Egyptian airliner with four terrorists aboard to NAS Sigonella.

It was all there...legitimate self-defense, deterrence, the use of disciplined restraint--not violence to reestablish a climate of law and order.

NPS personnel, dependents cited by Cystic Fibrosis

The following NPS personnel and dependents were listed in a letter of appreciation from Cystic Fibrosis Research, Inc. (CFRI), sent to the superintendent in recognition of volunteer assistance rendered during the 1985 Monterey Arabian Horse Classic, a CFRI fund-raising event.

Cited in the letter were: CDR David Alexander; LCDR Dave Barrett; LCDR John Callahan, Judy Callahan and Shannon Callahan; CDR John Connel, Chris Connell and John Connell; LCDR John Cole; LCDR Patrick Denny; LT Deke Dunlap; MAJ George Fenton and Vicky Fenton; LCOL Jack Gafford and Jeff Gafford; LCDR Richard Gormly and Margaret Gormly; LCDR Jim Graham; LT David Hingtgen and Sara Hingtgen; MAJ Ron Johnson and Georgia Johnson; LT Charles Kuzma; LT Thomas McIlravy; CAPT Thomas Moore; LCDR Art O'Grady and Peg O'Grady; LT David Prothero; Mrs. Joan Rodwell and Brian Rodwell; LT Vince Rossito; LT Ben Sanchez; LT Bill Sanford; LCDR Jim Saunders and Rachel Saunders; LT Michael Silvers; LT Richard Weston.

Legal notes

by LT Steve Bannow, Staff Judge Advocate

Many military members fear that going to court is an unpleasant, frightening, and complicated experience; in fact, it is not. Many find that problems they have been unable to resolve through other methods are resolved in a positive way through the courts.

When considering suit in Small Claims Court, the first issue that must be addressed is whether all other practical means of handling the problem have been exhausted. If negotiation has failed, a final demand letter should be sent to the other party. If an appropriate response is not received, it is time to go to court.

The Small Claims Court is a special court where suit may be brought against anyone who owes the plaintiff money, and, on occasion, this court may be used by a landlord to regain possession of residential property. The maximum that the plain-

tiff can collect is \$1,500. Both the plaintiff and the defendant may consult a lawyer before the trial, but neither may be represented by a lawyer in this court. In most counties in California, a "small claims advisor" may be consulted. The advisor can help with case preparation and will do so free of charge.

On the day the judge hears the case, the plaintiff simply explains why he feels the defendant owes him the money he seeks and presents any evidence and/or witnesses he needs to help him prove his case. The judge hears the position of each side and decides who is correct and the amount of any judgment for damages to be awarded. An unsuccessful plaintiff does not have the right to appeal the decision.

A checklist for filing a suit in Small Claims Court will appear in next week's edition of "The Quarterdeck."

Civiscoop

Earlier this year Richard Casavant, a locksmith in the public works department, was on duty in La Mesa Village when he heard a smoke alarm from one of the vacant units.

When he entered the quarters, he found a ruptured gas line and a fire in the kitchen. He promptly secured the gas line and called the NPS fire department. His action prevented serious structural damage to the quarters and saved possible injury to residents in adjoining units.

Casavant was formally recognized for his efforts this month, receiving a special act cash award.

Other civilian employees who received cash awards during October were: **Blanco M. Romero**, clerk-typist, aeronautics department, for exceptional office operation; **Linda M. Ishii**, secretary, air-ocean sciences program, for her outstanding performance appraisal; **James E. Peak**, meteorologist, meteorology department, for outstanding technical support in two research projects; **Sharon K. Sexauer**, secretary, Marine Corps representative's office, for outstanding performance; **Gregory E. Murphy**, La Mesa housing manager, for outstanding performance; **Arlene A. Bird**, oceanography, for sustained superior performance; and, **Donna M. Burych**, oceanography, for sustained superior performance.

It is official. Federal employees will not receive an across-the-board pay raise during FY 1986.

Both the Congress and President Reagan have agreed that the freeze is an essential step to help gain control of the ever-widening federal deficit.

However, incentive programs are still in effect. Regular step increases, quality step increases, merit pay raises for GM employees, and cash awards may still be used.

The cost of federal health insurance is going down in 1986.

The Office of Personnel Management (OPM) has announced that several plans are offering refunds in addition to reducing the 1986 rates.

These companies include Blue Cross-Blue Shield (service benefit plan), Aetna Life (indemnity benefit plan), AFGE, GEBA, and GEHA (government hospital association of Kansas City) and several others.

According to OPM, about 75% of those insured will have their rates reduced. Average savings will be around six percent.

Federal employees with post-1956 military service who are eligible for Social Security now have until September 30, 1986 to make their seven percent of basic military wages deposit. The change in the deadline allows employees added time to make interest-free payments to the civil service retirement fund. After Sept. 30, 1986, interest will accrue at the rate of 13%.

There have been some changes in the rights and benefits available to spouses of federal employees brought about by the Civil Service Spouse Equity Act which became effective in May 1985.

Some of the key provisions: employees leaving the federal government must notify their current and former spouses when applying for a refund of retirement contributions; retiring employees are required to provide written consent from their current spouse before being allowed to elect an annuity without full survivor benefits; and, under certain conditions, former spouses of federal employees may become entitled to a survivor annuity through a court order or voluntary election by a retiring employee.

New employees

Thirty-nine new civilian employees reported aboard during the latter part of October. The new staff and faculty members are:

Donald Abenheim, adjunct professor, national security affairs; **Raymond Aviles**, plumber, public works; **Leslie Carlson**, research technician, national security affairs; **Edward R. Castle**, accounting technician, NEPRF; **Helen Davis**, statistician, administrative sciences; **Carl L. DeVito**, adjunct teaching professor, mathematics; **Daniel Dukes**, student aid, public works; **Lloyd B. Embry**, adjunct professor, administrative sciences; **Jo Jean M. Fish**, clerk-typist, public works; **Jiraphon Garrard**, student aid, admissions office; **Patrick J. Garrity**, adjunct teaching professor, national security affairs; **Karen B. George**, tech manual editor, administrative sciences; **Arnold A. Hankins**, inventory management specialist, computer science; **Kathy L. Holland**, accounting technician, public works; **Greta D. James**, clerk-typist, supply; **Rosheilla M. Jones**, student aid, public works; **Diane M. Kelsey**, clerk-typist, space systems academic group; **Kim Kilsoo**, adjunct professor, mechanical engineering; **Eunice M. Klement**, clerk-typist, supply; **Ramesh Kolar**, assistant professor, aeronautics; **Georgette M. Kumre**, student aid, supply; **Vincent Y. Lum**, professor of computer science, computer science; **James A. McCoy**, physical science aid, oceanography; **Patricia Ann McEvoy-Jamil**, research technician, operations research; **Beny Neta**, professor, mathematics; **Joan A. Nick**, secretary, air-ocean sciences program; **Cyinda V. Nimmons**, clerk-typist, operations research; **Estrella K. O'Guin**, clerk-typist, supply; **Ignacio G. O'Muircheartaigh**, adjunct teaching professor, operations research; **Julio E. Olmo**, maintenance worker, FNOC; **Benjamin J. Roberts**, adjunct teaching professor, administrative sciences; **Charles W. Scheiff**, professor, mathematics; **Bruce W. Schmelser**, adjunct research professor, operations research; **Nancy M. Sharrock**, clerk-typist, safety office; **David C. Smith**, assistant professor, oceanography; **Ricki Sweet**, adjunct research professor, operations research; **Beatriz E. Usuga**, student aid, weapons engineering and ASW program; **Roberta A. Valenzuela**, student aid, FNOC; **Anne M. Van Nuys**, budget assistant, comptroller's office.



The above NPS print plant employees (from left: Richard W. Lawson, Michael J. Southard, Sally J. Lindall, Barbara J. Driscoll, Herman Laxen and Francis H. Casey) recently received a special achievement award for their teamwork during the period of November, 1984, through June, 1985. Each employee was presented a \$250 cash award by plant supervisor Barbara Driscoll for extraordinary cooperation during a time when their workload seemed enormous and insurmountable.

Annual leave- use it or lose it

The leave year for civilian employees ends on Jan. 4, 1986. Those employees with "use or lose" annual leave, that is leave in excess of 240 hours at the end of the leave year, should use that annual leave before Jan. 4. Your leave and earnings statement will show your "use or lose" annual leave balance.

An employee who carries more than 240 hours of leave into 1986 will forfeit the excess amount. Only under certain strict circumstances can the forfeited leave be restored to an employee's account.

Restoration of forfeited annual leave can be made only when the employee was sick and unable to use the leave or when the demands of the employing activity were of such importance as to preclude the employee's use of leave. Under both circumstances, the annual leave must have been scheduled in advance and in writing, and subsequently cancelled, and the restoration must be approved by the head of the activity.

Be aware of strange creatures as enlisted host Halloween gala

If you're walking around the enlisted club tonight, be prepared to see some strange creatures wandering around also because they will be attending the EM club's Halloween party.

If you haven't purchased your tickets by now, admission will be \$5 at the door. Door prizes will be awarded for the best costume and a local deejay will be there to provide entertainment. The club will open its doors to creatures of the night at 1930.

Enlisted picnic to be held Nov. 9

How would you like to spend a day playing softball, volleyball or horseshoes? Or perhaps just relaxing with friends?

If this sounds like your idea of entertainment, then you won't want to miss the Monterey Navy enlisted picnic on Nov. 9. The picnic will be held at the Fort Ord East Garrison travel camp grounds.

Cost is \$2 for active duty military and their families. Tickets may be purchased from division welfare and recreation representatives.

Enlisted spouses

The Enlisted Spouse Club will hold a meeting on Nov. 5 at the Durham Road Chapel at Fort Ord. The meeting will begin at 1900.

The meeting will center on the selection/election of club officers and adoption of a club charter. Child care will be available.

movies

The following movies will be shown this weekend at the Fort Ord movie theatres. Admission is \$2.

Doughboy

Fri-1900 Real Genius
2300 Creature

Sat-1900 Brewster's Million
Sun-1900 A View to a Kill

Presidio

Fri-1900 Legend of
Billy Jean

Sat-1900 The Bride
Sun-1900 Fright Night

Barker

Fri-1900 Fright Night
Sat-1900 Fletch
Sun-1900 Fletch
1530/1900 Volunteer

Hanson

Fri-1900 Mask
Sat-1900 The Falcon and
the Snowman
2130 Creature
Sun-1900 Real Genius

Coming events

Commissioned Officers club

El Prado Room

FRIDAY BUFFET MENUS (NOVEMBER)

Nov. 1 -	Mexican Buffet
Nov. 8 -	Seafood Buffet
Nov. 15 -	Oriental Buffet
Nov. 22 -	Western Buffet
Nov. 28 -	Thanksgiving Buffet
Nov. 29 -	Polynesian Buffet

The dining room is open 1730-2030 each Friday. Thanksgiving Day the dining room will be open 1200-1700.

NPS Navy Ball was colorful event

It was an exciting swirl of both color and black and white that capped the evening of the 210th Navy Birthday Ball last Saturday as the guests took partners dancing on the floor of the Barbara McNitt Ballroom.

The evening officially began with the sound of the bugle at 1900, bringing the attention of over 500 guests to emcee CDR Paul Buege. After the opening welcome, CDR Buege announced the special guests as the spotlight showed them through the honor guard to their seats.

The attention then turned to the stark white of the guard marching in the colors. After the national anthem, the color guard retired along with the honor guard, making way for Chaplain M. J. Hary's invocation to the soft tune of the Navy hymn.



Photo by J02 Mary Reed

The ship's bell sounded to the words of the two-bell ceremony, commemorating our lost shipmates. NPS superintendent RADM Robert H. Shumaker then welcomed the guests with his opening remarks.

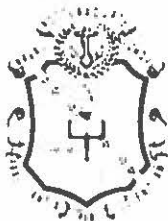
After thanks went to the Navy ball committee, toasts were made to the other branches of the armed forces. A roar of cheer came with the final toast to "the men and women of the Navy" as the band resounded "Anchors Aweigh."

Formal ceremonies ended with RADM Shumaker cutting the magnificent red, white and blue cake, with the emcee and president of the OSWC by his side.

Roast beef dinner with all the trimmings was served shortly afterwards.

the Quarterdeck

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We solicit material in written form, but reserve the right of editorial control. Material should be submitted to the Public Affairs Office, Room 024, Hermann Hall. Deadline for submission of material for publication is 12 noon, Monday.

The last event of the evening began when RADM Shumaker and wife, Lorraine, began the night of dancing, to the tune of "Fly Me to the Moon."
--J02 Mary Reed

Rec news

Trips and tickets

The recreation office has **Disneyland Military Days** tickets available for \$12 (a \$4.50 savings). Tickets are valid weekdays in October and any day in November and December.

The rec office is looking for women to play basketball. Anyone interested should sign up at the gym, 646-3118.

CAPT Dully heads SGL list

Three more superintendent's guest lectures (SGL) are scheduled for this academic quarter.

Next Tuesday, Oct. 29, CAPT Frank E. Dully, Jr., USN, the newly reported instructor and flight surgeon in Aviation Safety, will speak on "The Stress-Hardy Personality or Why the Better Officer Is the Worse Spouse."

Scheduled for next month are GEN Robert C. Kingston, USA, commander-in-chief, U. S. Central Command, on Nov. 12, and RADM D. L. Carlson, USN, chief of legislative affairs, on Nov. 19.

"Jesus" film at King Hall

The film "Jesus" will be shown in King Hall on Sunday, Oct. 27 at 1800. Admission is free.

Classified ads

Ads will be run on a first come, first served basis. Please notify the PAO of any ad cancellations by calling ext. 2023. Ads will be run for a maximum of two weeks unless resubmitted.

MOVING SALE sofa & stereo, best offer; coffee table/2 end tables, \$75; 2 nightstands, \$40; bedroom set, \$350. Call 375-4551 after 5.

1967 FIREBIRD rebuilt VR 326 engine, new brakes, radiator and muffler. \$1200 or best offer. Call 372-4882 after 5 p.m.

Navy continues zero drug tolerance

In continuing its policy of zero tolerance of drug use, the Navy has issued new guidelines which limit the number of sailors eligible for in-service residential drug rehabilitation.

Only first-time drug offenders, E-4 through E-6, who have more than two years of active service, demonstrate exceptional potential, show a strong desire for treatment and exhibit a high probability for success will be given in-service residential treatment. Sailors who do not meet the criteria will be separated from the Navy and, if they are diagnosed as drug dependent, offered residential treatment at Veteran's Administration (VA) facilities. This new policy goes into effect on Nov. 1.

Second time drug offenders, regardless of rate, will be separated from the Navy. If needed, they too will be offered residential drug rehabilitation at a VA facility.

The new drug policy will not affect individuals already scheduled for in-service treatment, but anyone with prior drug offenses in their records will be separated upon the next incident of drug abuse.

The officer/senior enlisted policy remains unchanged. However, voluntary self-disclosure does not exempt a person from disciplinary or adverse administrative action. These individuals will be afforded appropriate treatment on the same basis as people whose drug abuse is disclosed by other means.

New component for engines (from page one)

which compresses new gases. It is then expelled to power the turbine and propel the aircraft.

The first engines being addressed are the smaller gas turbines used in business jets, helicopters and air-breathing cruise missiles. These engines are inefficient because their small passage sizes incur high heat and energy losses because of friction. Long-range speculation involves new designs for automobile engines featuring a wave rotor within a gas turbine-like engine.

Even now, the wave rotor concept is being used in turbochargers for some diesel truck and automobile engines. Because there's no necessity for the machinery to "come up to speed" as in a conventional turbocharger, response is instantaneous. Additional power is made available without a proportional increase in fuel consumption.

Dr. Ray Shreeve, TPL director, estimates that the re-designed cruise missile engine could be operational in 10 years; man-rated engines for helicopters and V/STOL aircraft in 20.

Said Dr. Shreeve: "A real technology leap is promised for this gas turbine, a leap which is primarily attributable to the advent of the computer."

J01 Carolyn A. Dettling, USNR

Job announcements

Applications for the following vacancies are now being accepted in the Civilian Personnel Office. Consult the Merit Staffing Program Announcement in your department for further information.

Position & Announcement #	Location	Grade	Closing Date
Firefighter 85-78	Fire Dept	GS-05	28 Oct 85

Calendar

OCTOBER

-28 TO 1 NOV-
7TH INT'L WORKSHOP ON LASER
INTERACTION AND RELATED
PHENOMENA
61SW
IN-122
(POC: PROF. SCHWIRZKE,
EXT 2635)

NOVEMBER

-1-
1830-0100
MARINE CORPS OFFICERS BALL
BARBARA MCNITT BALLROOM
(POC: MAJ COTTEN, EXT 2116)

-13 TO 15-
JANNAF ROCKET NOZZLE
TECHNOLOGY MEETING
KING HALL
(POC: JANIS DEAMARAL,
EXT 2984)

Shore manager training

The Naval Civilian Personnel Command has announced their training program schedules for FY 86 for the Prospective Commanding Officer Shore Station Management Training Program and the Senior Shore Manager Institute (SSMI).

For information regarding course content, scheduling and nomination requirements, contact Liz Clark, civilian personnel office, ext. 3052.

Acania seaman passes away

Stephen Boyd, an NPS employee since 1972, passed away recently after a brief illness.

Boyd began his federal employment as an able seaman aboard the research vessel Acania. he was promoted first to boatswain and later to first assistant engineer.

There are no plans for a memorial service. For those who wish, the family suggests sending contributions to either the Hospice of Monterey or to Community Hospital.